

VIA ELECTRONIC MAIL

Kevin Mooney Senior Project Manager

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January 24, 2017

Erich Weissbart, P.G. EPA Region 3 Land and Chemicals Division 701 Mapes Road Fort Meade, MD 20755

Subject: Semi-Annual Project Progress Report: July-December 2016

RCRA Corrective Action Permit MDD046279311

Former Appliance Park East Facility

Columbia, Maryland

Dear Mr. Weissbart:

Please find attached the Semi-Annual Project Progress Report for the former Appliance Park East facility in Columbia, Maryland. This report covers the period from July 1 to December 31, 2016, and is submitted by the General Electric Company (GE) pursuant to Condition II.C of the above-referenced permit, as modified by the United States Environmental Protection Agency (EPA).

As required by Condition I.B.9 of the above-referenced permit, I certify under penalty of law that the enclosed report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact me or Belssi Chang Lee of Tetra Tech at (410) 990-4607 if you have any questions regarding the attached report.

Sincerely,

Kevin Mooney

Senior Project Manager

GE Global Operations - Environment, Health & Safety

Attachment

cc: Belssi Chang Lee, Tetra Tech (via email)

Ed Hammerberg, MDE (via email) Curt Lebak, RREEF (via email)

Bob Jenkins, Howard Hughes Corporation (via email)

SEMI-ANNUAL PROJECT PROGRESS REPORT

RCRA CORRECTIVE ACTION PERMIT (PERMIT)

Permittee: General Electric Company (GE)

Permit Number: MDD046279311

Prepared for GE Global Operations – Environmental Remediation

159 Plastics Avenue

Pittsfield, Massachusetts 01201

Prepared By: Tetra Tech, Inc. (Tetra Tech)

51 Franklin Street, Suite 400 Annapolis, Maryland 21401

Date: January 24, 2017

Report Period: July 1, 2016 to December 31, 2016

Copies: Maryland Department of the Environment (MDE)

RREEF Engineering

The Howard Hughes Corporation

1. Progress Made This Period

Underground Storage Tank (UST) No. 9 - CMS Unit 4

The most recent post-termination groundwater monitoring event was performed in November 2016; the report (Tetra Tech, 2016) was previously submitted to EPA. Attachment 1 includes a summary of the results. All well sample results were non-detect except for the following detections:

Compound (µg/L)	Benzene	Ethylbenzene	MTBE	Toluene	Xylene
Clean-up Goal (µg/L)	5	700	20	1,000	10,000
ERM-4	-	-	-	-	3.7
ERM-6	-	120	-	1.1	220
TP-8	1.2	-	-	2.4	18.4

GE will be in communication with EPA regarding approval to perform final verification sampling in April/May 2017 in accordance with the 2013 Post-Termination SAP to verify attainment of the clean-up goals.

Volatile Organic Compounds (VOCs) in Soil and Groundwater Beneath and Around the Former Manufacturing Building - RCRA Facility Investigation (RFI) Unit 2

The Parcel A-10 pump-and-treat system was fully operational over the last six months as noted in the monthly monitoring reports submitted to the United States Environmental Protection Agency (EPA) for this reporting period (i.e., July through December 2016). Attachment 2 includes summary tables and figures showing the site plan and performance monitoring results for the pump-and-treat system.

A groundwater monitoring event was conducted in November 2016 in accordance with the approved SAP dated May 4, 2011; the report (Tetra Tech, 2016) was previously submitted to EPA. Attachment 2 includes a summary of the results including groundwater elevation data, groundwater elevation contour maps for the saprolite and bedrock units, and summary of analytical results. The groundwater samples were collected using passive diffusion bags (PDBs). Tetra Tech deployed the (PDBs) on November 3, 2016 and retrieved them on November 18, 2016 to collect the groundwater samples. The samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260. The groundwater analytical results are summarized in Table 2; Table 3 presents trichloroethene (TCE) results since June 2007. Figures 9 and 10 illustrate the change in TCE concentrations since June 2000 at wells located within the plume core and at wells located at the plume toe and cross-gradient of the plume, respectively. The groundwater elevation and sample results from the November 2016 sampling event show that the hydraulic containment system continues to operate as intended. Specifically, VOC-impacted groundwater continues to be contained on Parcel A-10.

The Phase II soil vapor extraction (SVE) system was fully operational over the last six months except as noted in the monthly field logs submitted to EPA for this reporting period (i.e., July through December 2016). Attachment 3 includes a site plan for the Phase II SVE system, a plot showing the cumulative VOC mass removed by the system through time, and a flow chart that shows how the system is progressing through the termination criteria specified in the system's updated operation and maintenance manual submitted to EPA in June 2011.

Press Pit SVE manifold lines PMVE-2 and PMVE-4 (SVE wells PVE-3, PVE-4, PVE-7, and PVE-8) were shut down on July 22, 2016 to start termination testing. Per the termination criteria outlined in the flow chart in Attachment 3, the test wells were turned on for approximately one hour on August 4, September 1, and December 1, 2016 to take photo-ionization (PID) readings. The PID readings measured (1 to 8 parts per million [ppm]) were less than ten percent (<10%) of the original concentrations ("concentration criteria"). The wells will be turned on again in early March 2016. Should the PID readings remain below 10% of the original concentrations, the PMVE-2 and PMVE-4 wells will be considered to have met the termination criteria and will

ⁱ Abnormalities in the trends shown on Figure 9 (2MW-11) and Figure 10 (S-2, S-4, 2MW-4) are due to non-detect results, which are considered to be anomalous based on the analytical results from subsequent sampling events.

remain off. Subsequently, termination testing will start on the remainingⁱⁱ/active Press Pit SVE manifold lines PMVE-1, PMVE-3, and PMVE-5 (SVE wells PVE-1, PVE-2, PVE-5, PVE-6, PVE-9, and PVE-10).

Warehouse Building Oil/Water Separator and Acid Neutralization Units - RFI Unit 6

The next sampling event will be conducted in November 2017. The most recent monitoring event under the EPA-approved August 19, 2002 SAP was performed on November 29, 2012; groundwater samples were collected from monitoring wells 6MW-1, 6MW-2, 6MW-3, and OBG-65. The groundwater monitoring results were presented in a summary report (ERM, 2012) that was previously submitted to EPA. Attachment 4 includes a summary of the groundwater monitoring results including groundwater levels and the respective groundwater elevations (Table 1) and summary of analytical results (Table 2). VOCs were not detected in any of the groundwater samples except for 6MW-2, which is located at the former oil/water separator under the building. The groundwater elevation data and sample results show that the extent of VOC-affected groundwater remains within the footprint of the Warehouse Building.

Other Activities Conducted Pursuant to the Permit

The new RCRA Corrective Action Permit was issued by EPA for the facility with an effective date of November 3, 2012. In accordance with Part II.B.3 of the Permit, GE submitted an Institutional Control Plan (IC Plan) dated January 24, 2013 to EPA. By its email to GE, EPA approved the IC Plan on February 5, 2013. EPA approved the environmental covenants (ECs) for each of the properties subject to the IC Plan previously; however, following submittal of the signed ECs for parcels A-8, A-10 and A-15, MDE and EPA requested that the EC template be revised. An EC has been executed and recorded for Parcel A-8. GE is in communication with EPA regarding the ECs for the remaining parcels.

2. Problems Encountered During This Period

No problems were encountered during this period. The pump-and-treat system and Phase II SVE systems were fully operational over the last six months except as noted in the monthly monitoring reports and inspection logs previously provided to EPA.

TETRA TECH. INC.

ii As indicated in the previous progress report, SVE wells TVE-1S, TVE-1D, TVE-11D, and TVE-12D met the termination criteria in June 2016 and remain off.

3. Projected Work for the Next Reporting Period

UST No. 9 - CMS Unit 4

As indicated previously, GE will be in communication with EPA regarding approval to perform final verification sampling in April/May 2017.

VOCs in Soil and Groundwater Beneath and Around the Former Manufacturing Building - RFI Unit 2

The Parcel A-10 pump-and-treat system is expected to operate at full-scale through the next reporting period, with the exception of the operation of recovery well B-3 (which will be sampled again in September 2017 to monitor for rebound in VOC concentrations). The next groundwater monitoring event will be conducted in May 2017 in accordance with the SAP. Groundwater monitoring will include the monitoring wells on a semi-annual and annual sampling frequency.

The SVE system will continue to operate with Press Pit SVE manifold lines PMVE-1, PMVE-3, and PMVE-5 (SVE wells PVE-1, PVE-2, PVE-5, PVE-6, PVE-9, and PVE-10). GE will consider starting termination testing in these wells and evaluating if the Phase II SVE system should be shut down in 2017 based on the termination testing conducted to date.

Warehouse Building Oil/Water Separator and Acid Neutralization Units - RFI Unit 6

The next monitoring event is scheduled for October/November 2017.

Other Activities To Be Conducted Pursuant to the Permit

As stated previously, GE is continuing work towards finalizing the ECs for each of the properties subject to the IC Plan. Once the ECs have been executed by all appropriate parties, the ECs will be recorded with the Howard County Land Records.

4. Changes in Personnel

Effective January 1, 2017 the GE project manager for this project is Mr. Kevin Mooney.

References

Environmental Resources Management (ERM), 2012. Analytical Results for Ground Water Sampling at RFI Unit 6 Former Appliance Park East Facility, Columbia, Maryland, RCRA Corrective Action Permit MDD046279311. December 27, 2012.

Tetra Tech, Inc. (Tetra Tech) 2016. Biennial Groundwater Sampling and Analyses for Underground Storage Tank (UST) No. 9. RCRA Corrective Action Permit MDD046279311, Former Appliance Park East Facility, Columbia, MD. November 30, 2016.

Tetra Tech, 2016. Semi-Annual Groundwater Monitoring Report, November 2016 Sampling Event, RCRA Corrective Action Permit MDD046279311, CMS Units 2 and 7, Former Appliance Park East Facility, Columbia, Maryland. December 8, 2016.

Attachments

Attachment 1: Findings Summary for Underground Storage Tank (UST) No. 9 - CMS Unit 4

Attachment 2: Findings Summary for Groundwater for RFI Units 2 and 7

Attachment 3: Findings Summary for the Phase II SVE System at RFI Units 2 and 7

Attachment 4: Findings Summary for Warehouse Building Oil/Water Separator and Acid Neutralization Units RFI Unit 6

ATTACHMENT 1

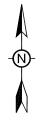
To Semi-Annual Project Progress Report RCRA Corrective Action Permit No. MDD046279311

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Former Appliance Park East Facility
Columbia, MD

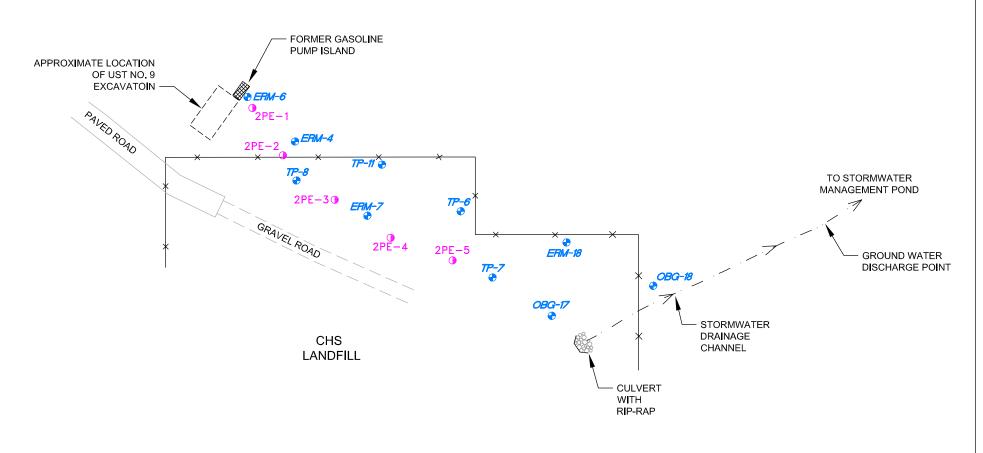
Period 1 July 2016 to 31 December 2016

Findings Summary for Underground Storage Tank (UST) No. 9 - CMS Unit 4

FIGURE 1 POST-TERMINATION MONITORING WELL LOCATIONS FOR UST NO. 9 FORMER ARRIVANCE BARK EAST



FORMER APPLIANCE PARK EAST COLUMBIA, MARYLAND



LEGEND

POST-TERMINATION MONITORING WELL LOCATION

× × FENCE





BASE MAP SOURCE:

ERM, INC., DECEMBER 2012 REPORT

Figure 3
Benzene Concentrations
UST No. 9
Former Appliance Park East Facility
Columbia, Maryland

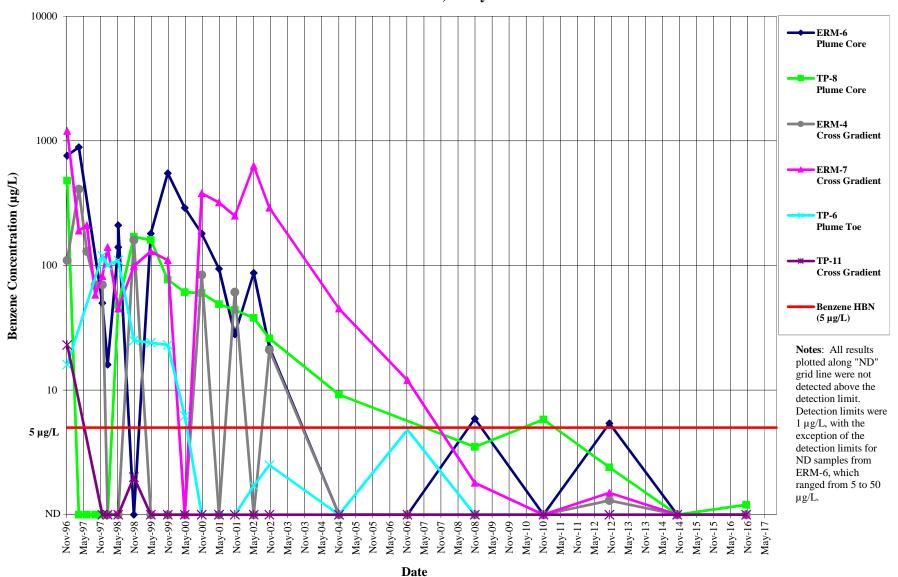


Table 1
Summary of Ground Water Elevations in Monitoring Wells at UST No. 9
Former Appliance Park East Facility, Columbia, Maryland
November 2016

			10/23	3/2012	10/22/2	2014 ^(c)	11/1/	2016
	Reference	Re-Survey Reference	Depth to Ground	Ground Water	Depth to Ground	Ground Water	Depth to Ground	Ground Water
Well ID	Elevation	Elevation (a), (b)	Water	Elevation	Water	Elevation	Water	Elevation
	(feet msl)	(feet msl)	(feet bre)	(feet msl)	(feet bre)	(feet msl)	(feet bre)	(feet msl)
ERM-4	359.96		22.67	337.29	21.75	338.21	22.18	337.78
ERM-6	360.62		23.06	337.56	21.15	339.47	22.55	338.07
ERM-7	366.30		29.17	337.13	28.26	338.04	28.70	337.60
ERM-18	351.10		17.40	333.70	16.30	334.80	16.86	334.24
TP-6	359.18		22.56	336.62	21.65	337.53	22.12	337.06
TP-7 (a)	360.60	360.83	23.47	337.36	22.81	338.02	23.32	337.51
TP-8 (b)	362.14	361.82	24.48	337.34	23.54	338.28	23.98	337.84
TP-11	364.51		27.31	337.20	26.40	338.11	26.71	337.80
OBG-17	351.96		18.23	333.73	17.16	334.80	17.68	334.28
OBG-18	349.14		15.96	333.18	14.74	334.40	15.00	334.14

Notes:

feet msl - feet above mean sea level

feet bre - feet below reference elevation

NM - Not Measured

⁽a) The stickup for TP-7 was damaged during site maintenance. It has been repaired and re-surveyed. The correct survey elevation is 360.83 feet msl as of October 2000.

⁽b) The stickup for TP-8 was damaged during site maintenance in October 2006. It was been repaired and resurveyed in February 2007. The elevation is 361.82 feet msl.

⁽c) ERM-4 could not be gauged on 10/22/2014 as the manhole cover was under 6 inches of rainwater. The well was gauged on 10/30/2014.

Table 2
Summary of Analytical Results for Ground Water Samples at UST No. 9
Former Appliance Park East Facility, Columbia, Maryland
November 2016

Well ID	ERM-4	ERM-6	ERM-7	ERM-18	TP-6	TP-7	TP-8	TP-11	OBG-17	OBG-18
Analytes (ug/L)	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16
Benzene	<1	<1	<1	<1	<1	<1<1	1.2	<1	<1	<1
Toluene	<1	1.1	<1	<1	<1	<1/<1	2.4	<1	<1	<1
Ethylbenzene	<1	120	<1	<1	<1	<1/<1	<3	<1	<1	<1
Xylene	3.7	220	<3	<3	<3	<3/<3	18.4	<3	<3	<3
MTBE	<1	<1	<1	<1	<1	<1/<1	<1	<1	<1	<1
Field Measurements										
pH (standard units)	5.38	6.11	5.18	7.14	6.06	6.22	5.78	5.13	7.45	7.5
Conductivity*	223	333	169	230	490	80	249	812	790	200
Temperature (Celsius)	14.73	16.21	14.23	15.5	13.9	14.9	13.69	13.6	15.8	16.4

Notes:

ug/L - micrograms per liter

MTBE - Methyl tertiary-butyl ether

MCLs - Benzene 5 ug/L; Ethylbenzene 700 ug/L; Toluene 1,000 ug/L; Xylenes 10,000 ug/L.

Analyses performed by Pace Analytical Services, Inc. by EPA Method SW 846-8260 starting in 2014. Analyses prior to 2014 performed by Lancaster Laboratories, Inc. using EPA Method SW 846-8021B.

ERM-4 sampled on 10/30/14 and not on10/22/14 when the other UST-9 monitoring wells were sampled due to its manhole cover being under 6 inches of rainwater on 10/22/14.

^{*} micromhos per second

< signifies not detected at the detection limit

⁽a) TP-170 is a blind field duplicate of TP-7

ATTACHMENT 2

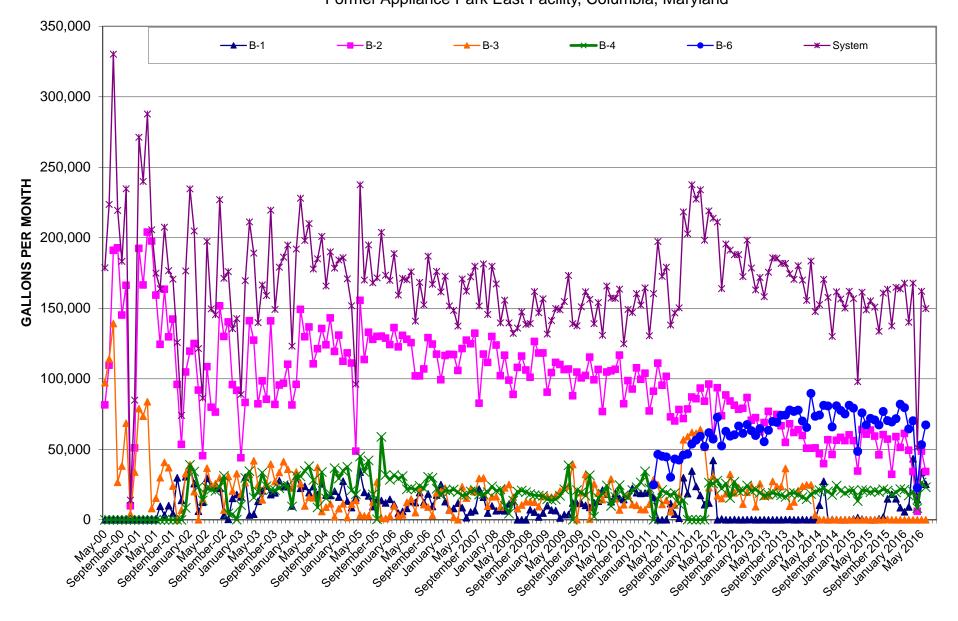
To Semi-Annual Project Progress Report RCRA Corrective Action Permit No. MDD046279311

General Electric Co.
Former Appliance Park East Facility
Columbia, MD

Period 1 July 2016 to 31 December 2016

Findings Summary for Groundwater for RFI Units 2 and 7

Figure 2
Groundwater Pump-and-Treat System Recovery
Former Appliance Park East Facility, Columbia, Maryland



TIME

Figure 3
Groundwater Pump-and-Treat System Recovery - Trailing 12-Month Total Gallons
Former Appliance Park East Facility, Columbia, Maryland

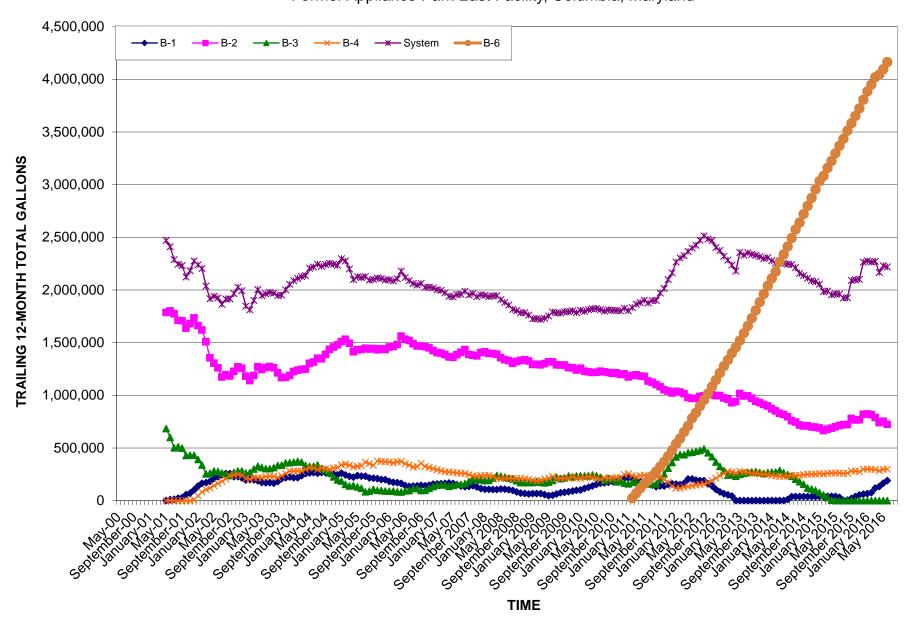
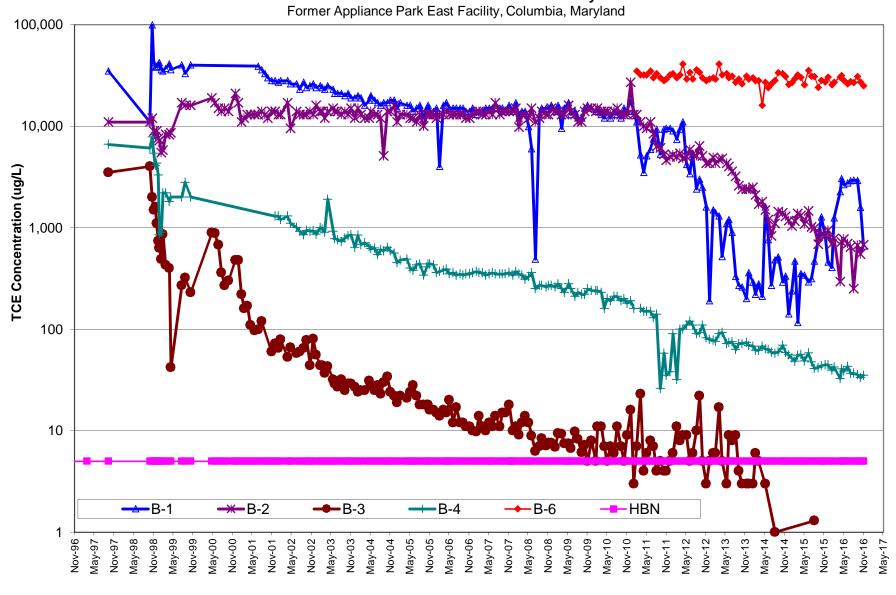
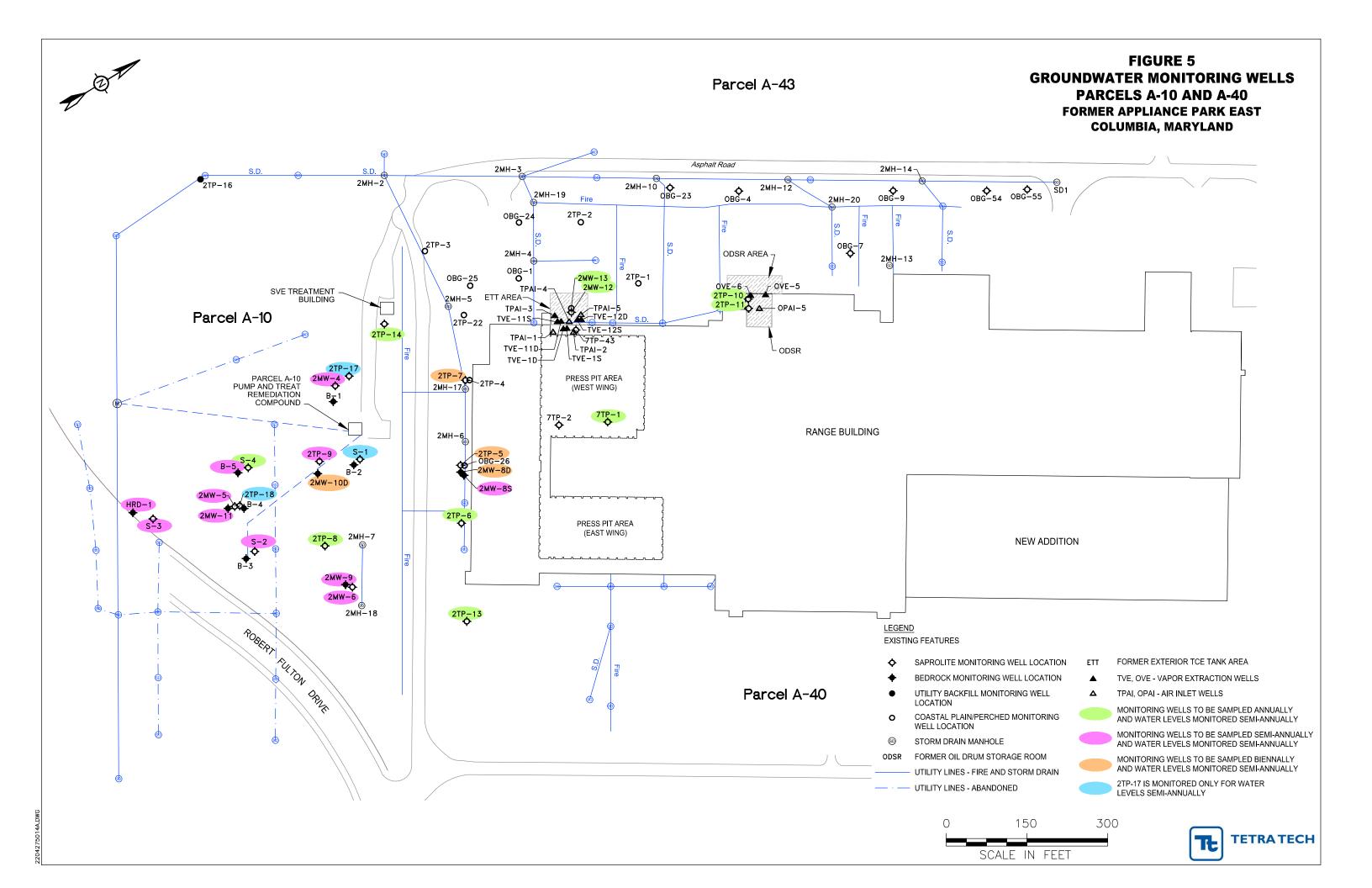
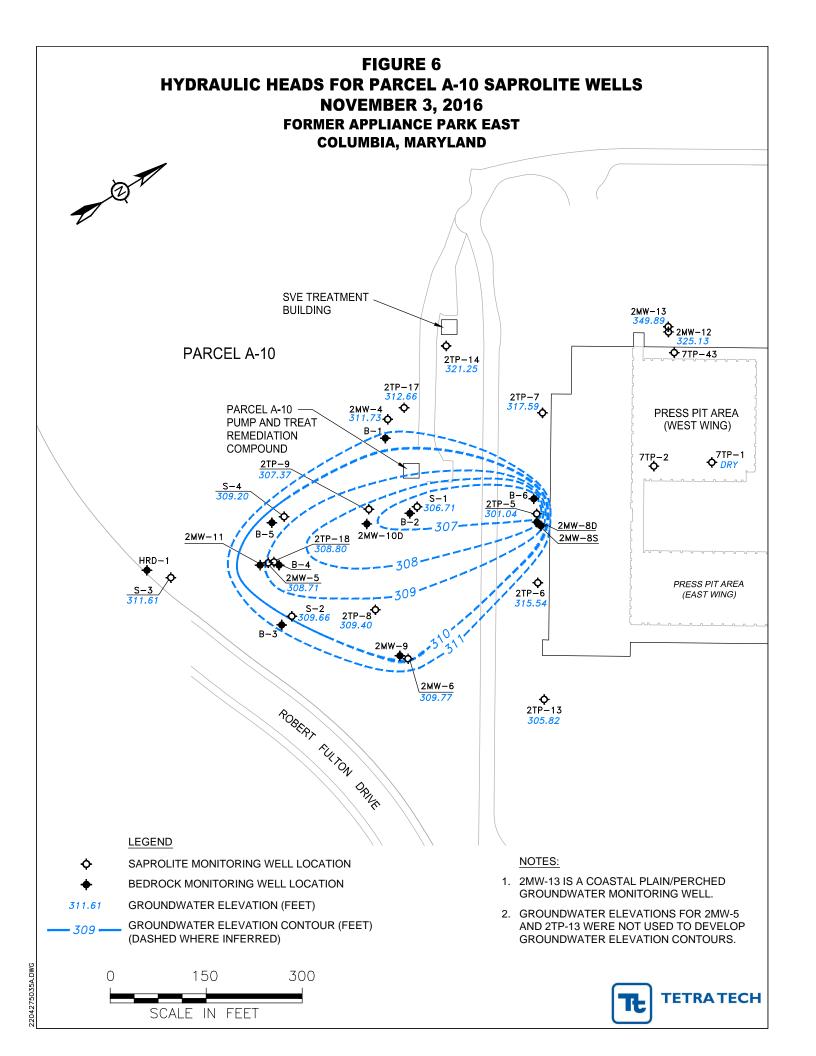


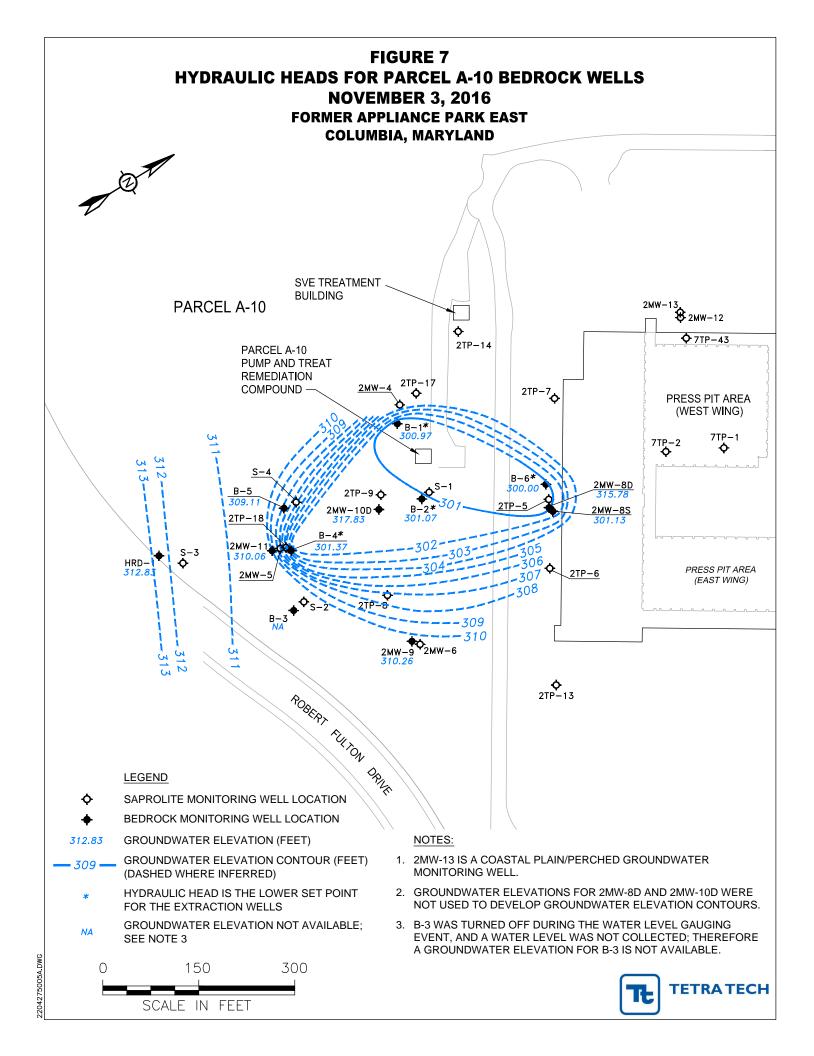
Figure 4
TCE Concentrations in Groundwater Recovery Wells



Date







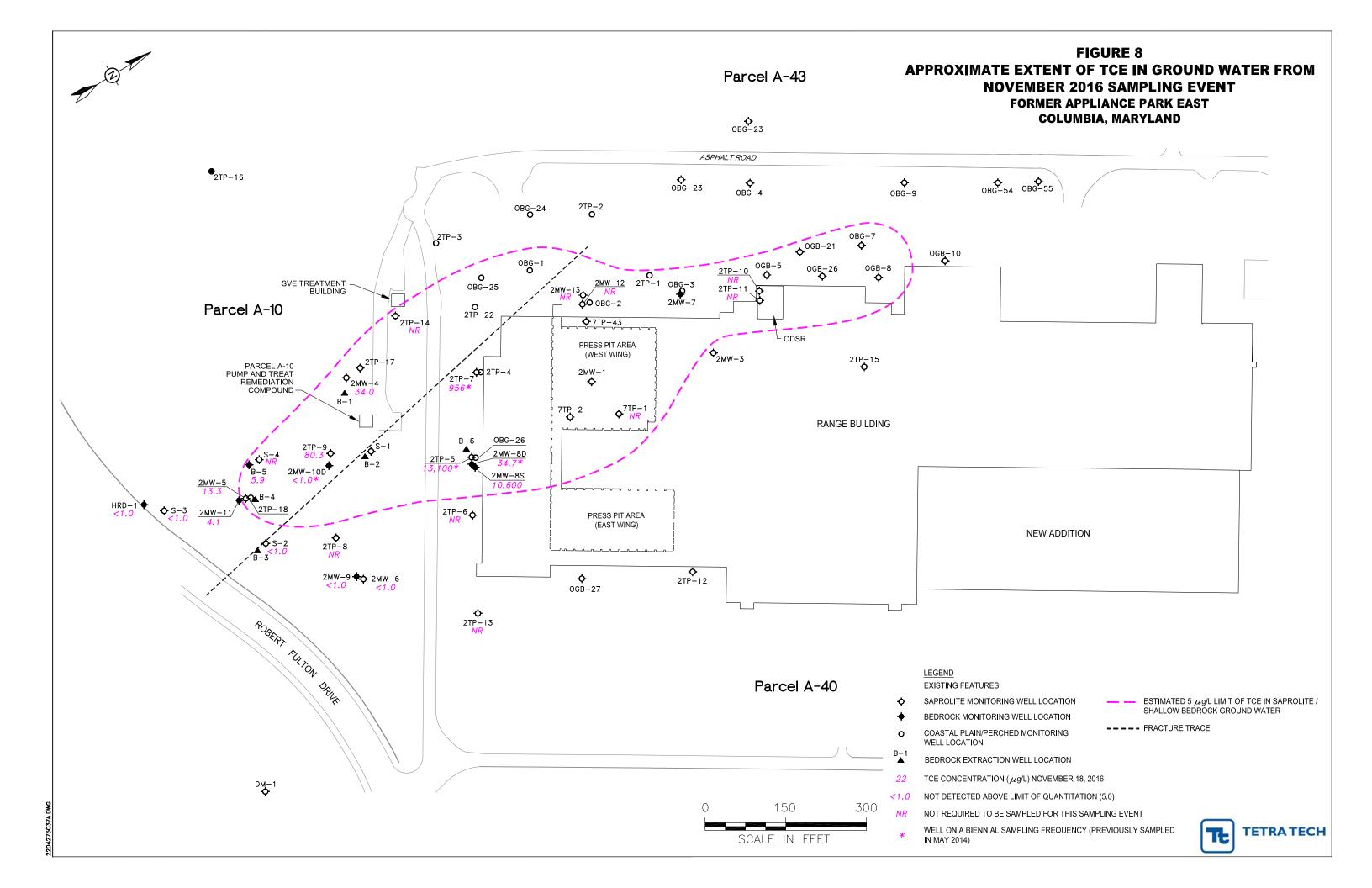


Figure 9
TCE Concentrations within Plume Core
Former Appliance Park East Facility
Columbia, Maryland

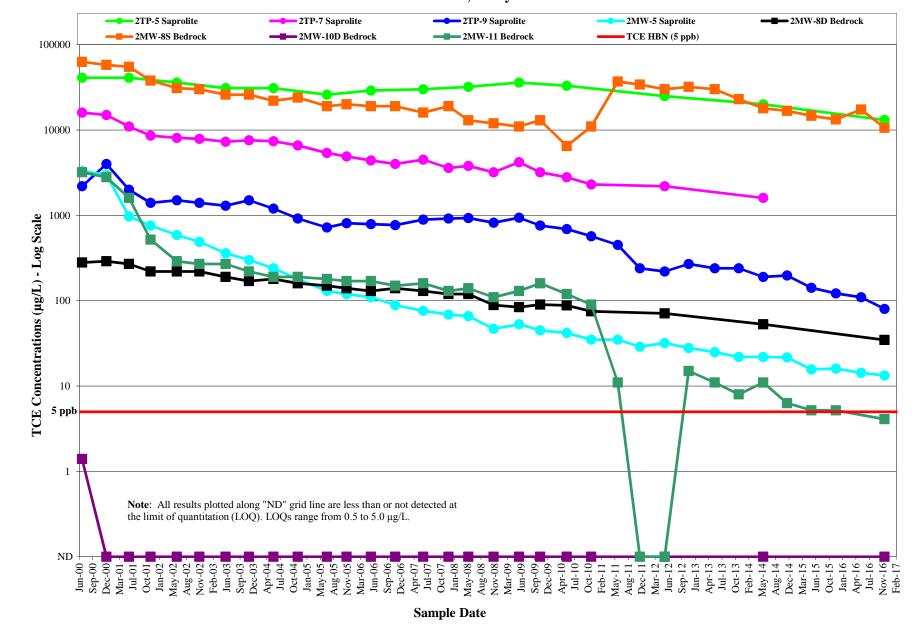


Figure 10
TCE Concentrations at Plume Toe and Cross-Gradient
Former Appliance Park East Facility
Columbia, Maryland

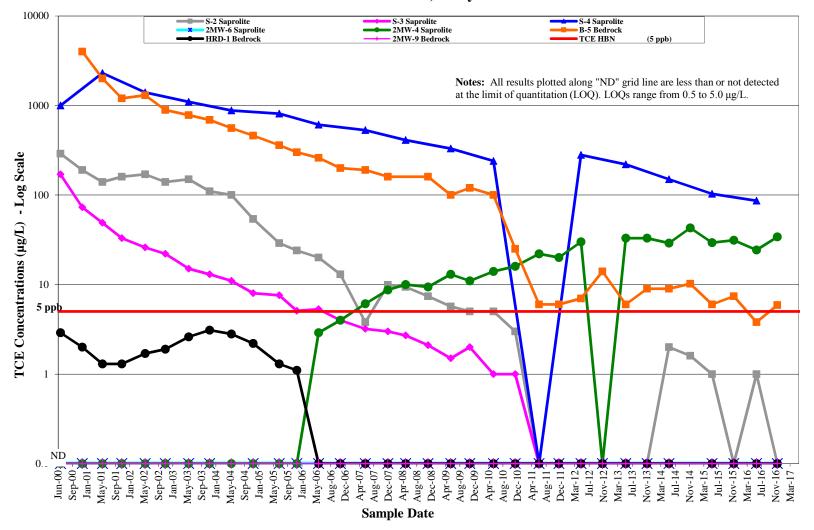


TABLE 1 Groundwater Elevations for Monitoring Wells at CMS Units 2 and 7 November 3, 2016

Former Appliance Park East Facility, Columbia, Maryland

		Reference Point Elevation	Well Depth	Well Screen Length	Well Screen Top	Well Screen Bottom	Screen Top	Screen Bottom Elevation	Sampling	Water Level Monitoring	Depth to Water on November 3, 2016	Groundwater Elevation on November 3, 2016
Well ID	Interpreted Lithology	(ft > MSL)	(ft BGS)	(ft)	(ft BGS)	(ft BGS)	(ft > MSL)	(ft > MSL)	Frequency**	Frequency	(ft BRE)	(ft > MSL)
		Τ	1			SAPROLITI	/ WATER TA		T	I	1	
7TP-1	Saprolite	345.76	24	20	4	24	342	322	Annually	Semi-Annually	Dry	Dry
2TP-5	Saprolite	358.02	63	15	48	63	308.38	293.38	Biennially	Semi-Annually	56.98	301.04
2TP-6	Saprolite	358.79	50	15	35	50	321.41	306.41	Annually	Semi-Annually	43.25	315.54
2TP-7	Saprolite	358.76	59	15	44	59	313.16	298.16	Biennially	Semi-Annually	41.17	317.59
2TP-8	Saprolite	348.67	62	15	47	62	299.11	284.11	Annually	Semi-Annually	39.27	309.40
2TP-9	Saprolite	348.85	55	15	40	55	305.95	290.95	Semi-Annually	Semi-Annually	41.48	307.37
2TP-10	Coastal Plain & Saprolite	358.95	23	10	13	23	345	335	Annually	Semi-Annually	17.54	341.41
2TP-11	Coastal Plain & Saprolite	357.57	30	10	20	30	338	328	Annually	Semi-Annually	17.93	339.64
2TP-13	Saprolite	362.11	59	15	44	59	315.58	300.58	Annually	Semi-Annually	56.29	305.82
2TP-14	Saprolite	348.85	48	15	33	48	314.77	299.77	Annually	Semi-Annually	27.60	321.25
2TP-17	Saprolite	349.29	47	15	32	47	314.8	299.8	None	Semi-Annually	36.63	312.66
2TP-18	Saprolite	346.42	43	15	28	43	316.02	301.02	None	Semi-Annually	37.62	308.80
2MW-4	Saprolite	348.8	46	20	26	46	320.31	300.31	Semi-Annually	Semi-Annually	37.07	311.73
2MW-5	Saprolite	346.06	68	15	53	68	290.87	275.87	Semi-Annually	Semi-Annually	37.35	308.71
2MW-6	Saprolite	350.13	44	15	29	44	318.6	303.6	Semi-Annually	Semi-Annually	40.36	309.77
2MW-12	Saprolite	353.61	36	15.0	21.0	36.0	332.57	317.57	Annually	Semi-Annually	28.48	325.13
2MW-13	Coastal Plain/Perched	353.42	11	8	3	11	350.69	342.69	Annually	Semi-Annually	3.53	349.89
S-1	Saprolite	349.94	41	30	11	41	336.9	306.9	None	Semi-Annually	43.23	306.71
S-2	Saprolite	346.89	50	30	20	50	325.06	295.06	Semi-Annually	Semi-Annually	37.23	309.66
S-3	Saprolite	347.69	50	30	20	50	325.78	295.78	Semi-Annually	Semi-Annually	36.08	311.61
S-4	Saprolite	346.14	50	30	19	49	325.23	295.23	Annually	Semi-Annually	36.94	309.20
		I	1			BI	EDROCK		I	1	1	
2MW-8S	Bedrock	359.24	128	20	108	128	248.8	228.8	Semi-Annually	Semi-Annually	58.11	301.13
2MW-9	Bedrock	349.45	93	20	73	93	274.47	254.47	Semi-Annually	Semi-Annually	39.19	310.26
2MW-11	Bedrock	345.54	120	20	100	120	243.61	223.61	Semi-Annually	Semi-Annually	35.48	310.06
2MW-8D	Bedrock	359.09	208	15	193	208	163.43	148.43	Biennially	Semi-Annually	43.31	315.78
2MW-10D	Bedrock	348.56	200	24	176	200	170.08	146.08	Biennially	Semi-Annually	30.73	317.83
HRD-1	Bedrock	341.11	140	20	120	140	221.11	201.11	Semi-Annually	Semi-Annually	28.28	312.83
B-5	Bedrock	345.99	140	86	54	140	290.08	204.08	Semi-Annually	Semi-Annually	36.88	309.11

NOTES:

BGS = below ground surface

ft = feet

BRE = below reference elevation

> MSL = above mean sea level

The low set points for the pump-and-treat system recovery (extraction) wells are: B-1: 300.97 ft MSL; B-2: 301.07 ft MSL; B-3: 306.43 ft MSL; B-4: 301.37 ft MSL; and B-6: 300.00 ft MSL.

^{**} Semi-annual frequency: May/June and November/December. Annual frequency: May/June. Biennial sampling: May/June of even years starting in 2012.

TABLE 2 VOC Detections for CMS Units 2 and 7 Groundwater Monitoring November 18, 2016

Former Appliance Park East Facility, Columbia, Maryland

		Cis-1,2-	Trans-1,2-	1,1-	1,1-			1,1,2-	
Well - Sample	Trichloroethene	dichloroethene	dichloroethene	Dichloroethane	Dichloroethene	Tetrachloroethene	Chloroform	Trichloroethane	Vinyl Chloride
ID	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Saprolite / Wat	er Table							•	
7TP-1	NR	NR	NR	NR	NR	NR	NR	NR	NR
2TP-5*	13,100	333	8.4	6.7	13.7	3.8	<1.0	<1.0	5.7
2TP-6	NR	NR	NR	NR	NR	NR	NR	NR	NR
2TP-7*	956	50.2	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0
2TP-8	NR	NR	NR	NR	NR	NR	NR	NR	NR
2TP-9	80.3	250	5.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2TP-10 ^{CS}	NR	NR	NR	NR	NR	NR	NR	NR	NR
2TP-11 ^{CS}	NR	NR	NR	NR	NR	NR	NR	NR	NR
2TP-13	NR	NR	NR	NR	NR	NR	NR	NR	NR
2TP-14	NR	NR	NR	NR	NR	NR	NR	NR	NR
2MW-4	34.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-5	13.3	6.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-12	NR	NR	NR	NR	NR	NR	NR	NR	NR
2MW-13 ^{CP}	NR	NR	NR	NR	NR	NR	NR	NR	NR
S-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
S-3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
S-4	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bedrock									
2MW-8S	10600 / 11,500	694 / 769	12.7 / 11.2	5.1 / 5.0	8.5 / 8.5	2.6 / 2.7	<1.0 / <1.0	<1.0 / <1.0	3.2 / 3.2
2MW-9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-11	4.1	35.6	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-8D*	34.7	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-10D*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HRD-1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-5	5.9	29.9	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Field Blank	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

NOTES:

ug/L = Micrograms per liter

/ = Duplicate samples

NR = well not sampled - not required for this sampling event

NSD = Not sampled due to well being dry or had insufficient volume of water

Starting in November 2009 samples analyzed using EPA Method 8260

MW-12, MW-13, 2TP-10, and 2TP-11 added to semi-annual sampling in June 2011

< = result is less than or not detected at this limit of quantitation

^{CS} Costal Plain & Saprolite

CP Coastal Plain/Perched Well

^{*} Well on a biennial sampling frequency.

TABLE 3
Historical TCE Analytical Results for CMS Units 2 and 7 Groundwater Monitoring
Former Appliance Park East Facility, Columbia, Maryland

			Screen BGS)	6/14/2007	12/20/2007	1/2008	5/16/2008	11/20/2008	5/29/2009	11/3/2009	5/21/2010	11/19/2010	6/6/2011	11/18/2011
Well - Sample ID	Well Depth (ft BGS)	Тор	Bottom (ft BGS)	TCE (μg/L)	TCE (μg/L)	TCE (µg/L)	TCE (μg/L)	TCE (µg/L)	TCE (μg/L)	TCE (µg/L)	TCE (μg/L)	TCE (µg/L)	TCE (μg/L)	TCE (μg/L)
Saprolite / W	ater Table													
7TP-1	24	4.0	24.0	NC	NSD	NR								
2TP-5*	63.0	48.0	63.0	30,000	NR	NC	32,000	NR	36,000	NR	33,000	NR	NR	NR
2TP-6	50.0	35.0	50.0	NSD	<2.0	NC	NSD	NSD	NSD	NSD	NSD	<1.0	NSD	NR
2TP-7*	59.0	44.0	59.0	4,500	3,600	NC	3,800	3,200	4,200	3,200	2,800	2,300	NR	NR
2TP-8	62.0	47.0	62.0	<2.0	<2.0	NC	<2.0	<0.5	<0.5	<1.0	<1.0	<1.0	<5.0	NR
2TP-9	55.0	40.0	55.0	890	920	NC	930	820	940	760	690	570	450	240
2TP-10 ^{CS}	21.9	13.0	23.0	NC	50,000	NC	68,000	NR						
2TP-11 ^{CS}	30.0	19.2	30.0	NC	3,200	NC	5,400	NR						
2TP-13	59.0	44.0	59.0	<2.0	<2.0	NC	<2.0	0.7	0.5	<1.0	<1.0	<1.0	7.0	NR
2TP-14	58.0	43.0	58.0	5.4	4.6	NC	4.4	3.6	3.1	2.0 J	3.0 J	4.0 J	<5.0	NR
2MW-4	46.0	26.0	46.0	6.1	8.7	NC	10.0	9.4	13.0	11.0	14.0	16	22/22	20
2MW-5	68.0	53.0	68.0	76	69	NC	66	47	53	45	42	35	35	29
2MW-6	44.0	29.0	44.0	<2.0	<2.0	NC	<2.0	<0.5	<0.5	<1.0	<1.0	<1.0	<5.0	<5.0
2MW-12	34.9	19.9	34.9	NA	NC	890	NC	NC	NC	NC	NC	NC	1,900	NR
2MW-13 ^{CP}	11.0	3.0	11.0	NA	NC	8.1	NC	NC	NC	NC	NC	NC	21	NR
S-2	50.0	20.0	50.0	4	10	NC	9	7	6	5.0 J	5.0 J	3.0 J	<5.0	<5.0
S-3	50.0	20.0	50.0	3.2	3.0	NC	2.7	2.1	1.5	2.0 J	1.0 J	1.0 J	<5.0	<5.0
S-4	50.0	20.0	50.0	530	NR	NC	410	NR	330	NR	240	NR	<5.0	NR
Bedrock														
2MW-8S	128.0	108.0	128.0	16,000	19,000	NC	13,000	12,000	11,000	13,000	6,500	11,000	37,000	34,000/33,000
2MW-9	93.0	73.0	93.0	<2.0	<2.0	NC	<2.0	<0.5	<0.5	<1.0	<1.0	<1.0	<5.0	<5.0
2MW-11	120.0	100.0	120.0	160	130	NC	140	110	130	160	120	90	11	<5.0
2MW-8D*	208.0	193.0	208.0	130	120	NC	120	89	84	90	88	75	NR	NR
2MW-10D*	200.0	176.0	200.0	<2.0	<2.0	NC	<2.0	<0.5	<0.5	<1.0	<1.0	<1.0	NR	NR
HRD-1	140.0	120.0	140.0	<2.0	<2.0	NC	<2.0	<0.5	<0.5	<1.0	<1.0	<1.0	<5.0	<5.0
B-5	140.0	54.0	140.0	190	160	NC	NS	160 E	100	120	100	25	6	6
Field Blank	-	-	-	<2.0	<2.0	NC	<2.0	<0.5	<0.5	<1.0	<1.0	<1.0	<5.0	<5.0

NOTES:

ug/L = Micrograms per liter NR = Not required for this sampling event

BGS = Below ground surface NS = Not sampled unable to retrieve passive bag sampler

CS Costal Plain & Saprolite NSD = Not sampled due to insufficient volume of water in well

CP Coastal Plain/Perched Well <= result is less than or not detected at this limit of quantitation

/ = Duplicate samples MW-12, MW-13, 2TP-10, and 2TP-11 added to semi-annual sampling in June 2011

TCE = Trichloroethene Starting in November 2009 samples analyzed using EPA Method 8260

NC = Not collected * Well on biennial sampling frequency

NA = Not avaliable Table presents concentrations from 2007 to the present

TABLE 3 Historical TCE Analytical Results for CMS Units 2 and 7 Groundwater Monitoring Former Appliance Park East Facility, Columbia, Maryland

			Screen										
	Well	(ft E	BGS)	5/21/2012	11/16/2012	5/30/2013	11/25/2013	5/27/2014	11/21/2014	5/22/2015	11/20/2015	5/27/2016	11/18/2016
Well -	Depth	Тор	Bottom	TCE	TCE	TCE							
Sample ID	(ft BGS)	(ft BGS)	(ft BGS)	(μg/L)	(μg/L)	(μg/L)							
Saprolite / W	ater Table												
7TP-1	24	4.0	24.0	NSD	NR	NSD	NR	NSD	NR	NSD	NR	NR	NR
2TP-5*	63.0	48.0	63.0	25,000	NR	NR	NR	20,000	NR	NR	NR	NR	13,100
2TP-6	50.0	35.0	50.0	NSD	NR	NSD	NR	NSD	NR	<1.0	NR	NR	NR
2TP-7*	59.0	44.0	59.0	2,200	NR	NR	NR	1,600	NR	NR	NR	NR	956
2TP-8	62.0	47.0	62.0	<5.0	NR	<5.0	NR	<5.0	NR	<1.0	NR	NR	NR
2TP-9	55.0	40.0	55.0	220	270	240	240	190	198	142	122	122	80.3
2TP-10 ^{CS}	21.9	13.0	23.0	58,000	NR	53,000	NR	54,000	NR	55,300	NR	NR	NR
2TP-11 ^{CS}	30.0	19.2	30.0	7,800	NR	6,400	NR	7,000	NR	7,240	NR	NR	NR
2TP-13	59.0	44.0	59.0	10	NR	10	NR	9	NR	8.9	NR	NR	NR
2TP-14	58.0	43.0	58.0	<5.0	NR	<5.0	NR	<5.0	NR	5.7	NR	NR	NR
2MW-4	46.0	26.0	46.0	30	<5.0	33	33	29	33	29.4	31.3	31.3	34.0
2MW-5	68.0	53.0	68.0	32	28	25	22	22	21.7	15.7	16	16	13.3
2MW-6	44.0	29.0	44.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-12	34.9	19.9	34.9	2,000	NR	1,200	NR	1,000	NR	292	NR	NR	NR
2MW-13 ^{CP}	11.0	3.0	11.0	9	NR	13	NR	11	NR	11.8	NR	NR	NR
S-2	50.0	20.0	50.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.6	1.0	<1.0	<1.0	<1.0
S-3	50.0	20.0	50.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
S-4	50.0	20.0	50.0	280	NR	220	NR	150	NR	103	NR	NR	NR
Bedrock													
2MW-8S	128.0	108.0	128.0	29,000/30,000	30,000/32,000	28,000/30,000	23,000/23,000	18,000/18,000	14,700/16,800	14,700/13,600	13,300 / 13,300	13,300 / 13,300	10,600 / 11,500
2MW-9	93.0	73.0	93.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2MW-11	120.0	100.0	120.0	<5.0	15	11	8	11	6.3	5.2	5.2	5.2	4.1
2MW-8D*	208.0	193.0	208.0	71	NR	NR	NR	53	NR	NR	NR	NR	34.7
2MW-10D*	200.0	176.0	200.0	<5.0	NR	NR	NR	<5.0	NR	NR	NR	NR	<1.0
HRD-1	140.0	120.0	140.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-5	140.0	54.0	140.0	7	14	6	9	9	10.2	6	7.4	7.4	5.9
Field Blank	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	1.0	<1.0	<1.0	<1.0	<1.0

NOTES:

ug/L = Micrograms per liter

BGS = Below ground surface

^{CS} Costal Plain & Saprolite

CP Coastal Plain/Perched Well

/ = Duplicate samples TCE = Trichloroethene

NC = Not collected

NA = Not avaliable

NR = Not required for this sampling event

NS = Not sampled unable to retrieve passive bag sampler

NSD = Not sampled due to insufficient volume of water in well

< = result is less than or not detected at this limit of quantitation

MW-12, MW-13, 2TP-10, and 2TP-11 added to semi-annual sampling in June 2011

Starting in November 2009 samples analyzed using EPA Method 8260

* Well on biennial sampling frequency

Table presents concentrations from 2007 to the present

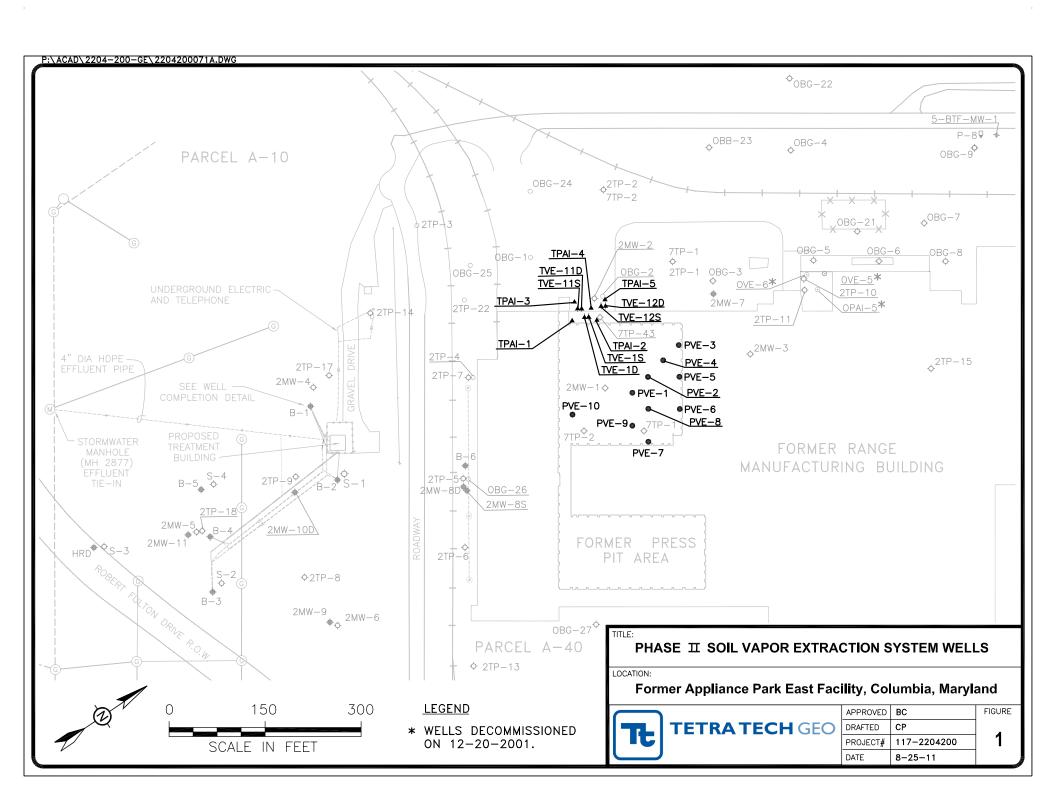
ATTACHMENT 3

To Semi-Annual Project Progress Report RCRA Corrective Action Permit No. MDD046279311

General Electric Co.
Former Appliance Park East Facility
Columbia, MD

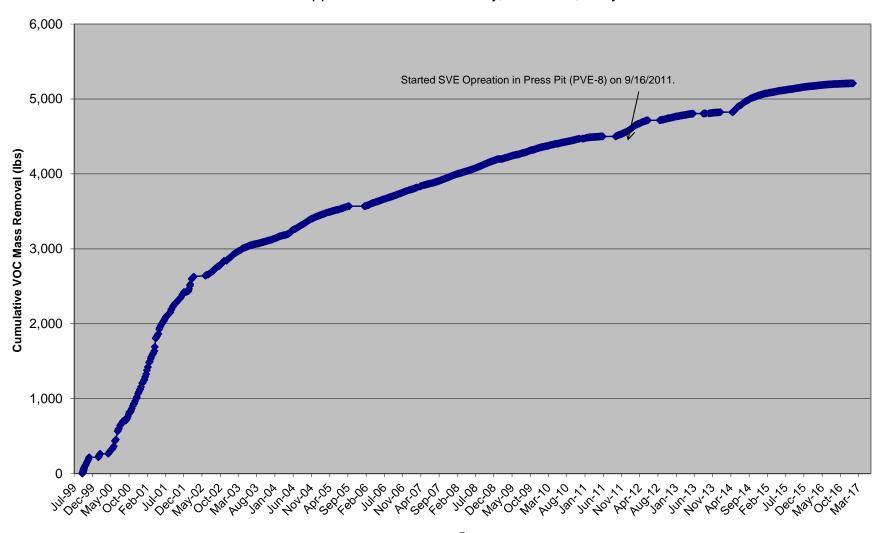
Period 1 July 2016 to 31 December 2016

Findings Summary for the Phase II SVE System at RFI Units 2 and 7



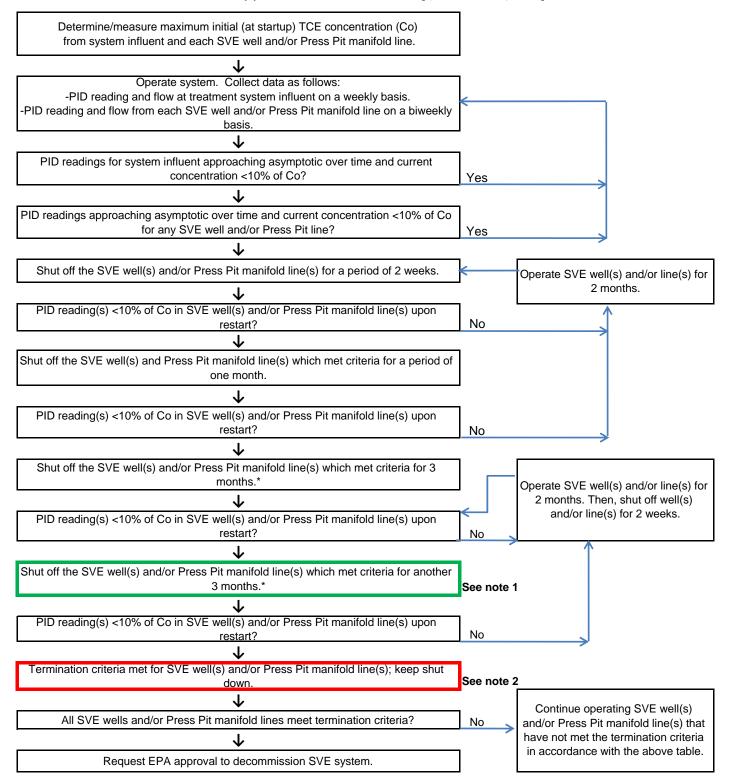
Phase II Soil Vapor Extraction System VOC Mass Removal

Former Appliance Park East Facility, Columbia, Maryland



Phase II Soil Vapor Extraction System Termination Criteria STATUS AS OF DECEMBER 2016

Former GE Appliance Park East Facility, Columbia, Maryland



NOTES

- 1. Press Pit manifold lines PMVE-2 and PMVE-4 turned off on 7/22/16 to start shutdown testing.
- 2. SVE wells TVE-1S, TVE-1D, TVE-11D, and TVE-12D met termination criteria in June 2016 and will remain off.

ATTACHMENT 4

To Semi-Annual Project Progress Report RCRA Corrective Action Permit No. MDD046279311

General Electric Co.
Former Appliance Park East Facility
Columbia, MD

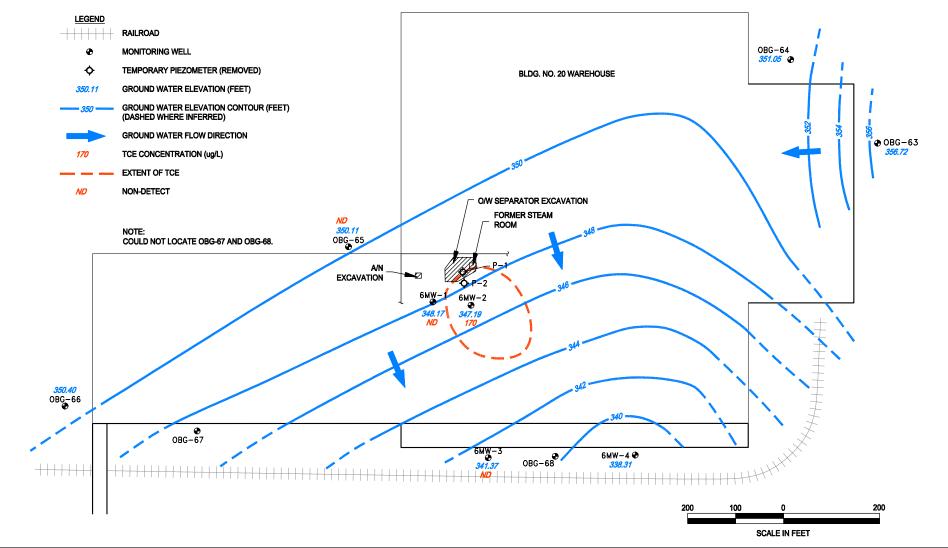
Period 1 July 2016 to 31 December 2016

Findings Summary for
Warehouse Building Oil/Water Separator and
Acid Neutralization Units
RFI Unit 6

FIGURE 1 GROUND WATER ELEVATION CONTOUR MAP 29 NOVEMBER 2012



RFI UNIT #6 GE - FORMER APPLIANCE PARK EAST COLUMBIA, MARYLAND



G: \CAD\Drawings\GE-Columbia\0153757\A106.DWG

Table 1 Summary of Ground Water Elevations RFI Unit 6 Former Appliance Park East, Columbia, Maryland

Date		17	-Oct-94*	17	7-Jan-95*	18	3-Apr-95*	1	8-Jul-95*	16	6-May-02	1-	4-Nov-07	29	-Nov-12
	Reference Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL	Depth to Water	Ground Water Elevation Feet, MSL
6MW-1 6MW-2 6MW-3 6MW-4 OBG-63 OBG-64 OBG-65 OBG-66 OBG-67 OBG-68	359.70 359.49 355.21 355.17 361.58 362.40 362.61 361.99 355.05 355.54	10.99 11.58 11.91 10.81 9.61 11.33 11.97 11.81 5.44 12.05	348.71 347.91 343.30 344.36 351.97 351.07 350.64 350.18 349.61 343.49	11.41 12.04 12.00 10.52 8.33 10.52 11.83 12.57 5.55	348.29 347.45 343.21 344.65 353.25 351.88 350.78 349.42 349.50 343.27	11.37 11.93 12.17 NM 9.22 11.01 12.30 12.42 5.38 12.50	348.33 347.56 343.04 352.36 351.39 350.31 349.57 349.67 343.04	11.05 11.55 11.77 10.59 9.35 11.00 12.12 11.95 4.36 11.93	348.65 347.94 343.44 344.58 352.23 351.40 350.49 350.04 350.69 343.61	12.69 13.42 17.14 15.83 5.60 11.51 13.33 13.54 6.69 NM	347.01 346.07 338.07 339.34 355.98 350.89 349.28 348.45 348.36	12.08 12.68 14.76 16.55 5.61 11.99 13.41 13.37 NM	347.62 346.81 340.45 338.62 355.97 350.41 349.20 348.62	11.53 12.30 13.84 16.86 4.86 11.35 12.50 11.59 NM	348.17 347.19 341.37 338.31 356.72 351.05 350.11 350.40

Notes:

* - Data presented in *Addendum to the RCRA Facility Investigation Report for RFI Unit 6*, dated 2 August 1995 Reference elevation for all wells is top of PVC casing

MSL - Mean Sea Level

NM - Not measured, well was inaccessible

Table 2 Detected Analytes for Ground Water Samples RFI Unit 6

Former Appliance Park East, Columbia, Maryland

	Sample	Number		6-	MW-1			6-N	/W-2			6-1	VIW-3		6-N	/W-4		0	BG-65		OBG-67	OBG-68
Samp	le Collect	ion Date	8/22/94*	5/16/2002	11/14/2007	11/29/2012	8/23/94*	5/16/2002	11/14/2007	11/29/2012	8/23/94*	5/16/2002	11/14/2007	11/29/2012	8/23/94*	5/16/2002	8/22/94*	5/16/2002	11/14/2007	11/29/2012	8/23/94*	8/23/94*
Analyte	HBN	PQL																				
Field Parameters																						
pH (standard units)			6.9	6.4	5.9	6.3	6.3	6.2	6.7	6.0	6	6.6	6.8	6.7	5.4	6.2	6.2	6.4	6.2	6.0	6.8	6.7
Conductivity (mS/cm)			NA	0.169	0.238	0.116	NA	0.203	0.660	0.079	NA	0.771	0.616	0.298	NA	0.908	NA	0.213	0.315	0.090	NA	NA
Temperature (°C)			NA	19.8	17.4	19.1	NA	19.7	16.5	19.5	NA	16.7	16.6	17.7	NA	16.5	NA	15.9	15.7	16.1	NA	NA
D.O. (mg/L)			NA	2.83	NA	NA	NA	0.84	NA	NA	NA	2.21	NA	NA	NA	4.59	NA	4.63	NA	NA	NA	NA
Permit List 4 Volatiles (μg	/L)																					
1,1-Dichloroethene	7	5		< 5	< 5	< 5		30	56	85		< 5	< 5	< 5		< 5		< 5	< 5	< 5		
cis-1,2-Dichloroethene		5	NA	< 5	< 5	< 5	NA	82	89	97	NA	< 5	< 5	< 5	NA	< 5	NA	< 5	< 5	< 5	NA	NA
1,2-Dichloroethene (total)	100	5		NA	NA	NA	11	NA	NA	NA		NA	NA	NA		NA		NA	NA	NA		
Trichloroethene	5	5		< 5	< 5	< 5	24	110	130	170		< 5	< 5	< 5		< 5		< 5	< 5	< 5		
Benzene	5	5		< 5	< 5	< 5	2 J	< 5	< 5	< 5		< 5	< 5	< 5		< 5		< 5	< 5	< 5		
Tetrachloroethene	5	5		< 5	< 5	< 5		6	18	44		< 5	< 5	< 5		< 5		< 5	< 5	< 5		
Inorganic Parameters (μg	/L)																					
Antimony	10	30		< 5	NA	NA		< 5	NA	NA		< 5	NA	NA		< 5		< 5	NA	NA	2.3	
Chromium	100	10	2.2 J	< 3	NA	NA	0.44 J	< 3	NA	NA	-	< 3	NA	NA	2 J	< 3		< 3	NA	NA	7.9	3.8 B

Notes:

mg/L - milligrams per liter

μg/L - micrograms per liter

HBN - Health Based Number

PQL - Practical Quantitation Limit

* - Data presented in RCRA Facility Investigation Report for RFI Unit 6, dated 3 March 1995

< 5 - Analyte not detected, value indicates detection limit

-- - Not detected.

NA - Not analyzed

J - Analyte present, result may not be accurate or precise

B - Not detected substantially above the level reported in laboratory or field blanks

d - Sample is a duplicate of 6MW-2

Page 1 of 2 12/10/2012

Table 2 (cont.) Detected Analytes for Ground Water Samples RFI Unit 6

Former Appliance Park East, Columbia, Maryland

	Sample	Number	6-MW-100 ^d	6-MW-20 ^d	6-M	W-5 ^d	6-1	B-1	6-E	B-1	6-1	ГВ-1	Т	B-1
Samp	ole Collecti	on Date	8/23/94*	5/16/2002	11/14/2007	11/29/2012	8/22/94*	5/16/2002	8/22/94*	5/16/2002	8/23/94*	5/16/2002	11/14/2007	11/29/2012
Analyte	HBN	PQL												
Field Parameters														
pH (standard units)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity (mS/cm)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (°C)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D.O. (mg/L)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Permit List 4 Volatiles (μg/L)														
1,1-Dichloroethene	7	5		30	57	84		< 5		< 5		< 5	< 5	< 5
cis-1,2-Dichloroethene		5	NA	83	95	96	NA	< 5	NA	< 5	NA	< 5	< 5	< 5
1,2-Dichloroethene (total)	100	5	10	NA	NA	NA		NA		NA		NA	NA	NA
Trichloroethene	5	5	23	110	130	170		< 5		< 5		< 5	< 5	< 5
Benzene	5	5	2 J	< 5	< 5	< 5		< 5		< 5		< 5	< 5	< 5
Tetrachloroethene	5	5		6	17	45		< 5		< 5		< 5	< 5	< 5
Inorganic Parameters (μg/L)														
Antimony	10	30		< 5	NA	NA		< 5		< 5		< 5	NA	NA
Chromium	100	10		< 3	NA	NA	1	< 3		< 3		< 3	NA	NA

Notes:

mg/L - milligrams per liter

μg/L - micrograms per liter

HBN - Health Based Number

PQL - Practical Quantitation Limit

* - Data presented in RCRA Facility Investigation Report for RFI Unit 6, dated 3 March 1995

< 5 - Analyte not detected, value indicates detection limit

-- - Not detected, detection limit not available

NA - Not analyzed

J - Analyte present, result may not be accurate or precise

B - Not detected substantially above the level reported in laboratory or field blanks

d - Sample is a duplicate of 6MW-2

Page 2 of 2 12/10/2012